

Work Order ID 75032

75032

Page 1

October-17-11 10:26:35 AM

Item ID: D3121-144 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Bracket Assembly
 Start Date: 17/10/2011 Start Qty: 6.00 ***6*** Cust Item ID:
 Required Date: 27/10/2011 Req'd Qty: 6.00 ***6*** Customer:
 Reference:

Approvals: Process Plan: M.L.J Date: 11/10/11 Tooling: Date: Run Start ***NR1***
 QC: Date: SPC (Y/N): Date: Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3121	Rev E								

100		0.00							
100	BAND SAW								
Bandsaw	Memo	0.00							
Jeaspa Bandsaw	Cut blanks: (1.250" x 2.000") 4:425" long		J.L.	12-01-04		6			
110		0.00							
110	HAAS CNC VERTICAL MACHINING #1								
HAAS 1	Memo	0.00							
HAAS CNC vertical machine #1	1-Machine D3121-114 as per Folio FA330 and Dwg D3121 Identify as D3121-1142-Deburr3-Scribe batch number		F.R.	12/01/05		6	1		PTO
120		0.00							
120	QC2- Inspect parts off machine FAI/FAIB								
QC	Memo	0.00							
Quality Control			F.R.	12/01/05		6	1		

W/O: 75032		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D3121-144 PAR #: _____ Fault Category: Machining NCR: Yes No DQA: AK Date: 12/1/17
 Resolution: Scrap Disposition: Scrap QA: N/C Closed: CK Date: 12/1/17

NCR: 12-1121		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
12/01/05	110	T7 had the wrong rad- 6.392 supposed to be .250 and the mesurmant is 3/16 AND	QSTW42	Will double check the tools when setup is done by somebody else. AND	F.K. 12/01/05	QSTW42 12/01/09	QSTW42 12/01/07	QSTW42 12/01/07
12/01/05	110	Ø.392 is under by .001". R.C. operator error / LOG.	12/01/05 AKB 12/01/17 QSTW42	Will enter the right offset next time. -Scrap + Destroy Q42 AND Re/see m. 119231	12/01/05	QSTW42 12/01/17	QSTW42 12/01/17	QSTW42 12/01/17

NOTE: Date & initial all entries

Work Order ID 75032

October-17-11 10:26:35 AM

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Item ID: D3121-144 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Bracket Assembly
 Start Date: 17/10/2011 Start Qty: 6.00 ***6*** Cust Item ID:
 Required Date: 27/10/2011 Req'd Qty: 6.00 ***6*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	QC8- Inspect parts - second check	0.00							
130									
QC	Memo	0.00	B.A	12/01/10		6	0		
Quality Control									
140		0.00							
140	Small Fab								
Small Fab	Memo	0.00							
Small Fab	Assemble D3121-143 as per Dwg D3121.								
150	QC5- Inspect part completeness to step on W/O	0.00							
150									
QC	Memo	0.00		8/2/11/13					
Quality Control									

Handwritten signatures and dates:
 12/01/12 (6)
 (46)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 75032

75032

Page 3

October-17-11 10:26:35 AM

Item ID: D3121-144 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Bracket Assembly
 Start Date: 17/10/2011 Start Qty: 6.00 ***6*** Cust Item ID:
 Required Date: 27/10/2011 Req'd Qty: 6.00 ***6*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160	Identify as per dwg & Stock Location ST235A	0.00							
160									
Packaging	Memo	0.00							
Packaging									
170	QC21- Final Inspection - Work Order Release	0.00							
170									
QC	Memo	0.00							
Quality Control									

(6x) 12-01-16

12/1/16

MF 12-01-16

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

October-17-11 10:26:39 AM

Page 1

Work Order ID: 75032

75032

Parent Item: D3121-144

D3121-144

Parent Item Name: Bracket Assembly

Start Date: 17/10/2011

Required Date: 27/10/2011

Start Qty: 6.00

Required Qty: 6.00

Comments: IPP Rev:Pick:A04.02.18New issueKJ/DS
IPP Rev:B ECN 1060 07-11-12 DD verified by:EC
IPP Rev:C New Dimensions for Blank Size 08-07-23 JLM Verified By:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D3121-241 *D3121-241* Bearing Assembly		Manufactured	No			100	Each	4.0000	2	12			
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				ST235A		4							
				67280		3							
				71851		1							
D3121-21 *D3121-21* Bolt		Manufactured	No			140	Each	81.0000	2	12			
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				ST235		81							
				66969		1							
				74546		80							
M174B1.250X02.000 *M174B1 250X02 000* 17-4 SS Bar 1.250 x 2.00		Purchased	No			140	f	39.1720	0.368	2.324211			
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				MAT050		39.172							
				114899		2							
				115806		3.272							
				117483		9.9							
				119231		24							

**

**

**

12/01/12
B 77939
1200
12/01/12
12
12-01-04

2.35

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order:	75032
Description: Bracket		Part Number:	D3121-114
Inspection Dwg: D3121	Rev: E	Page 1 of 2	

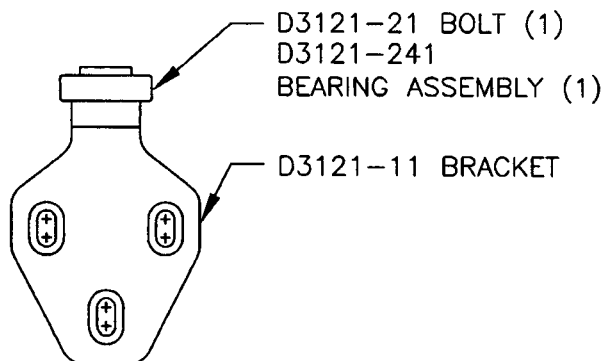
FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

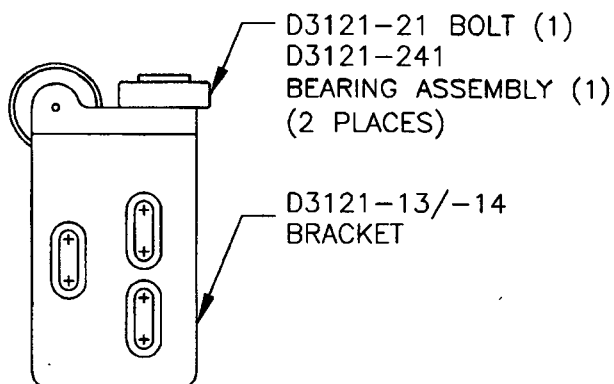
Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.080	+/-0.010	.080	✓		FK-04	Vern.
0.300	+/-0.010	.301	✓		"	"
R0.375	+/-0.010	.375	✓		rad gauge	
1.54	+/-0.030	1.54	✓		FK-04	Vern.
0.350	+/-0.010	.354	✓		"	"
R0.25	+/-0.030	.25	✓		rad gauge	
Ø0.392	+0.002/-0.000	.3930	✓		FK-01	Mic.
Ø0.201	+0.005/-0.000	.203	✓		FK-04	Vern.
0.100	+/-0.010	.098	✓		"	"
					"	"
2.540	+/-0.010	2.538	✓		"	"
1.590	+/-0.010	1.588	✓		"	"
0.160	+/-0.010	.158	✓		"	"
0.400	+/-0.010	.400	✓		"	"
1.220	+/-0.010	1.213	✓		"	"
1.600	+/-0.010	1.600	✓		"	"
3.80	+/-0.030	3.80	✓		"	"
1.800	+/-0.010	1.800	✓		"	"
R0.50	+/-0.030	.50	✓		rad gauge	
0.130	+/-0.010	.125	✓		FK-04	Vern.
3.41	+/-0.030	3.41 3.39	✓		"	"
3.65	+/-0.030	3.637	✓		31006	Height gauge
2.24	+/-0.030	2.22	✓		FK-04	Vern
45°	+/-0.1°	45°	✓		"	"
R0.25	+/-0.030	0.25 .25	✓		rad gauge	
3.97	+/-0.030	3.965	✓		31006	Height gauge
					FK-04	Vern.
R0.38	+/-0.030	.38	✓		rad gauge	
Ø0.392	+0.002/-0.000	.3930	✓		FK-01	Mic.
Ø0.201	+0.005/-0.000	.203	✓		FK-04	Vern.
0.268	+/-0.010	.268	✓		"	"
R0.260	+/-0.010	.260	✓		rad gauge	
0.080	+/-0.010	.080	✓		FK-04	Vern
0.300	+/-0.010	.301	✓		"	"
0.381	+/-0.010	.381	✓		"	"
0.201	+/-0.010	.205	✓		"	"

DART

DESIGN #	DRAWN BY LE	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED #	APPROVED #	DRAWING NO. D3121	REV. E SHEET 1 OF 10
DATE 07.11.07		TITLE BRACKET ASSEMBLY	SCALE 1:2
A	02.04.15	NEW ISSUE	
B	03.01.16	ADD RIDGES; ADD MAT'L PROP; FIX P/N ADD -141/-143/-144/-145/-146	
C	04.02.17	ADD CLEARANCE; USE -241 BEARING	
D	06.05.17	D3121-25 CAP WAS 1.024, NOW 1.000	
E	07.11.07	ADD TOLERANCE TO 0.032 (DETAIL B)	

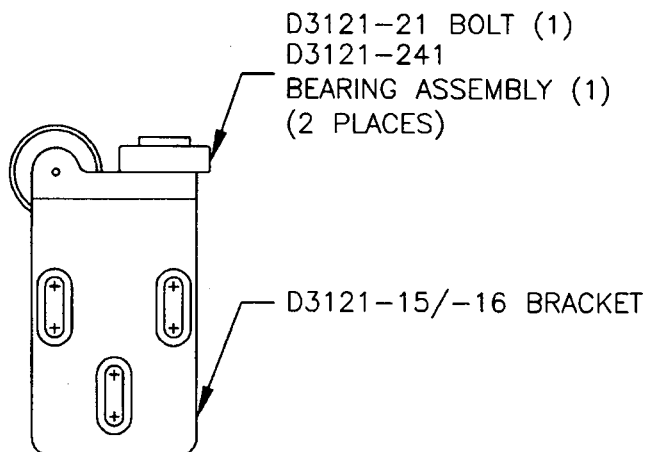
RELEASED
07.11.07

D3121-041 BRACKET ASSEMBLY
(REPLACES PREMIER P/N B30-23000-33)



**D3121-043 (SHOWN) / D3121-044 (OPPOSITE)
BRACKET ASSEMBLY**
(REPLACES PREMIER P/N B30-23000-37/-38)

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 75032 11-10-17



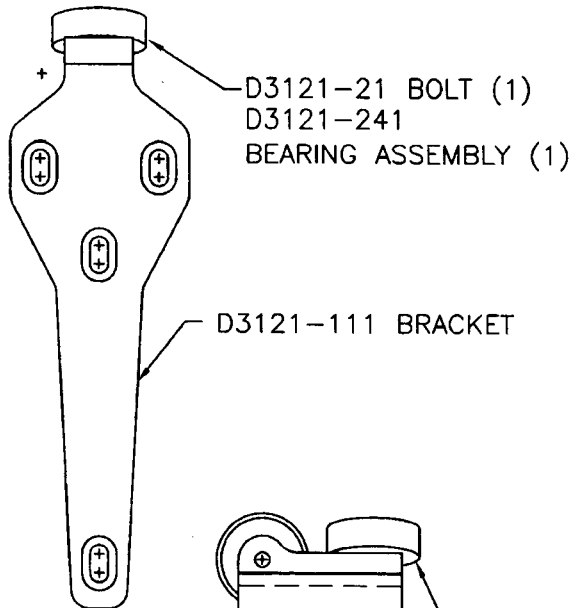
**D3121-045 (SHOWN) / D3121-046 (OPPOSITE)
BRACKET ASSEMBLY**
(REPLACES PREMIER P/N B30-23000-35/-36)

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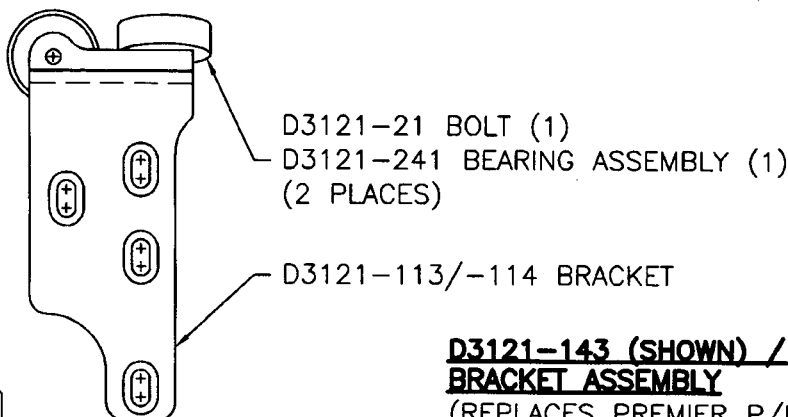
DART

DESIGN #	DRAWN BY LE	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED #	APPROVED #	DRAWING NO. D3121	REV. E SHEET 2 OF 10
DATE 07.11.07		TITLE BRACKET ASSEMBLY	SCALE 1:2



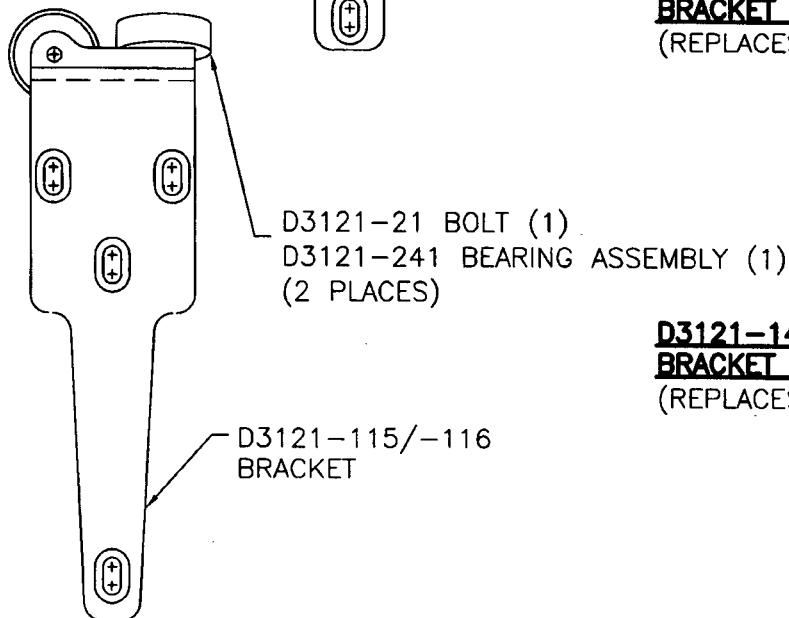
D3121-141 BRACKET ASSEMBLY
(REPLACES PREMIER P/N B30-23001-01)

RELEASED
07.11.07 W



D3121-143 (SHOWN) / D3121-144 (OPPOSITE)
BRACKET ASSEMBLY
(REPLACES PREMIER P/N B30-23000-03/-04)

75032



D3121-145 (SHOWN) / D3121-146 (OPPOSITE)
BRACKET ASSEMBLY
(REPLACES PREMIER P/N B30-23000-05/-06)

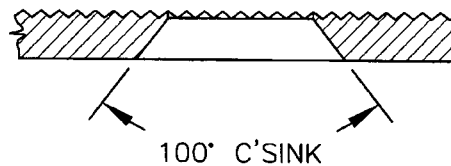
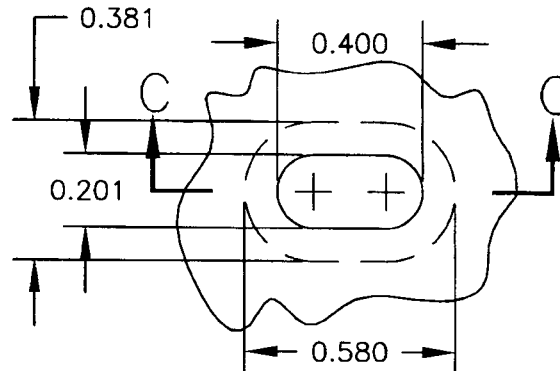
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DESIGN #	DRAWN BY LE	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED #	APPROVED #	DRAWING NO. D3121	REV. E SHEET 3 OF 10
DATE 07.11.07		TITLE BRACKET ASSEMBLY	SCALE 1:1

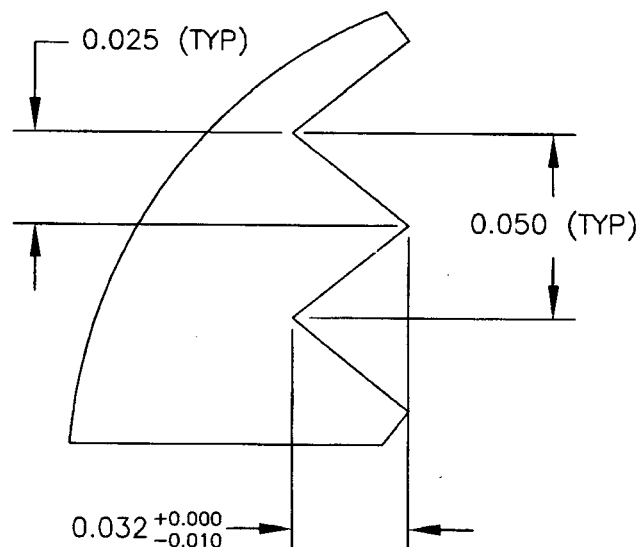
DETAIL A:
SLOT DETAIL
SCALE 2:1
VIEW ROTATED



SECTION
C-C

RELEASED
07.11.07

DETAIL B:
RIDGE DETAIL
PARTIAL SECTION
SCALE 1:20



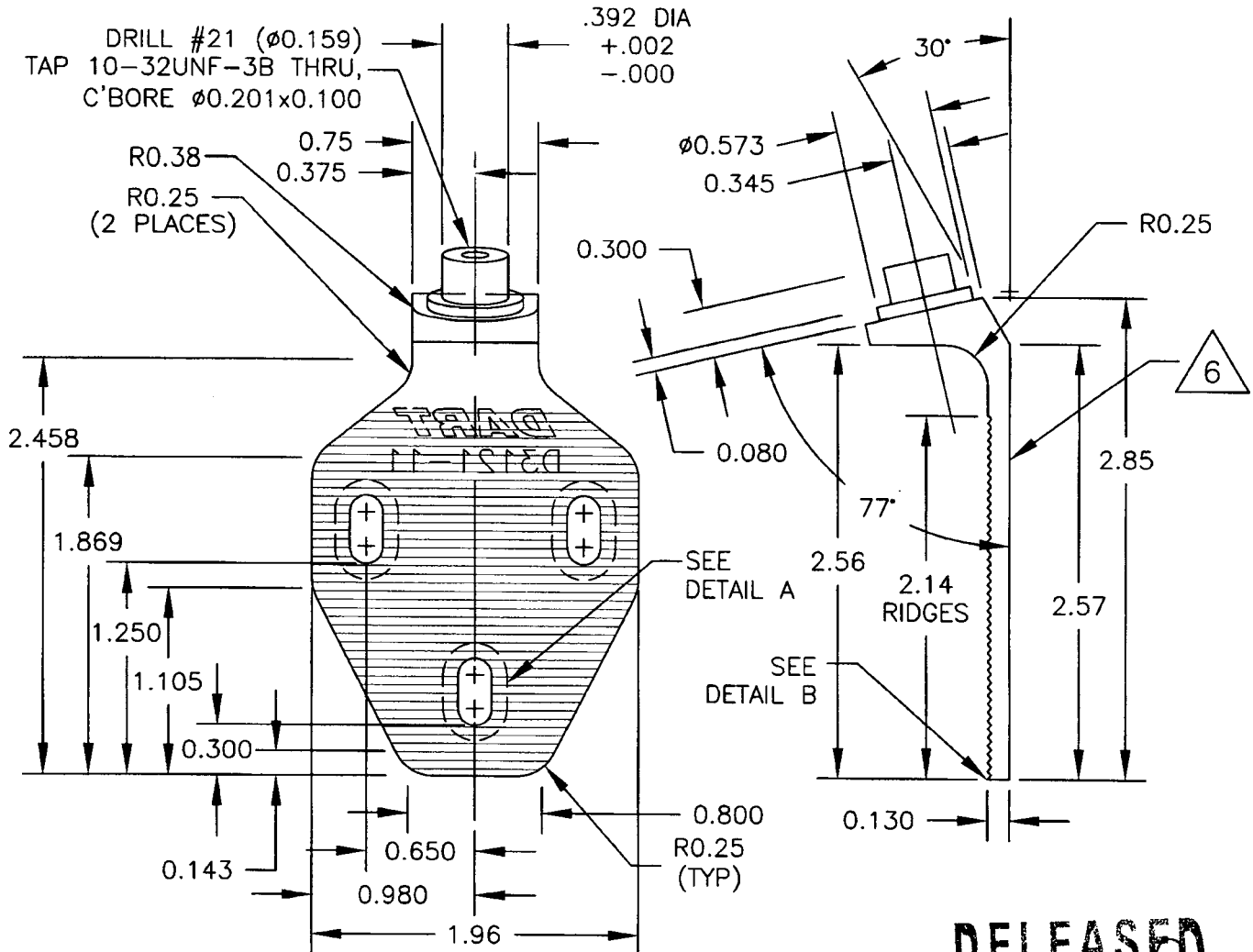
75032

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DART

DESIGN #	DRAWN BY LE	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED #	APPROVED #	DRAWING NO. D3121	REV. E SHEET 4 OF 10
DATE 07.11.07		TITLE BRACKET ASSEMBLY	SCALE 1:1

**RELEASED**
07.11.07

75032

D3121-11 BRACKET

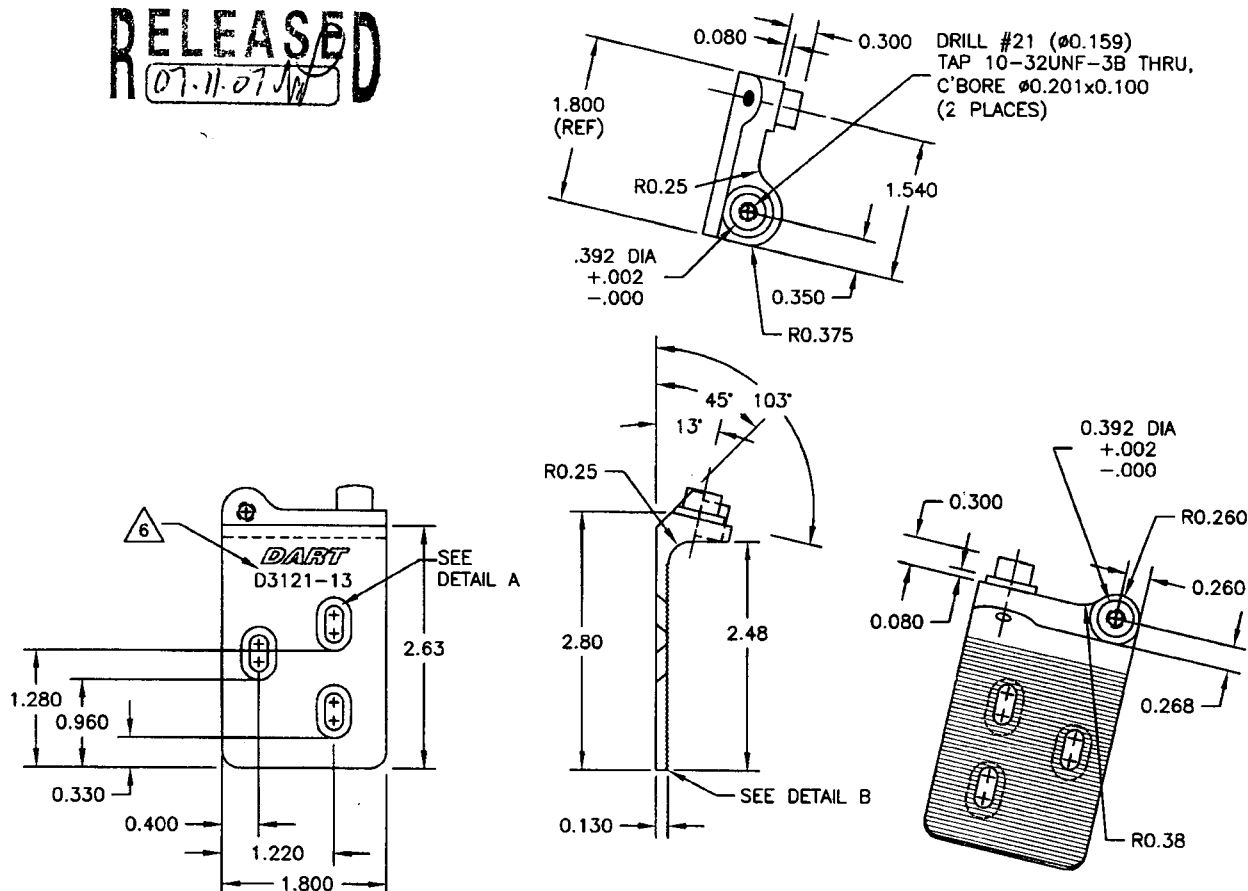
- 1) MATERIAL: 17-4 SS PER AMS 5604/5643 (REF DART SPEC. M17-4-B)
MIN ULTIMATE TENSILE = 150 ksi
MIN YIELD TENSILE = 100 ksi
- 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) ALL DIMENSIONS ARE IN INCHES
- 4) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 5) ENGRAVE DART P/N & LOGO AS SHOWN
- 6) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

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DESIGN #	DRAWN BY LE	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED #	APPROVED #	DRAWING NO. D3121	REV. E SHEET 5 OF 10
DATE 07.11.07		TITLE BRACKET ASSEMBLY	SCALE 1:2

RELEASED
07.11.07

75032

D3121-13 BRACKET (SHOWN)**D3121-14 BRACKET (OPPOSITE)**

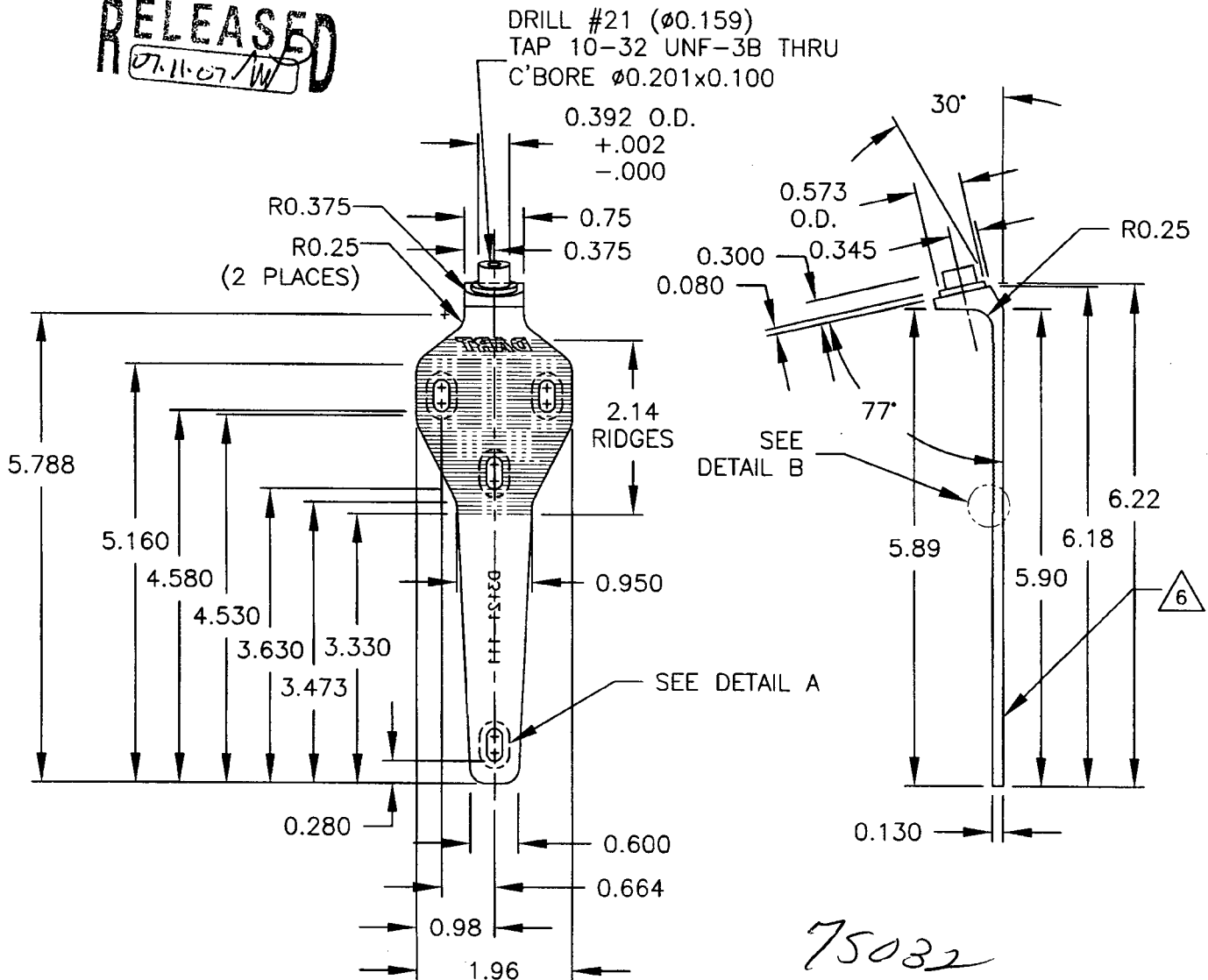
- 1) MATERIAL: 17-4 SS PER AMS 5604/5643 (REF DART SPEC. M17-4-B)
MIN ULTIMATE TENSILE STRENGTH = 150 ksi
MIN YIELD TENSILE STRENGTH = 100 ksi
- 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) ALL DIMENSIONS ARE IN INCHES
- 4) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 5) ENGRAVE DART P/N & LOGO AS SHOWN
- 6) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

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DESIGN #	DRAWN BY LE	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED #	APPROVED #	DRAWING NO. D3121	REV. E SHEET 7 OF 10
DATE 07.11.07		TITLE BRACKET ASSEMBLY	SCALE 1:2

RELEASED
07.11.07/W**D3121-111 BRACKET**

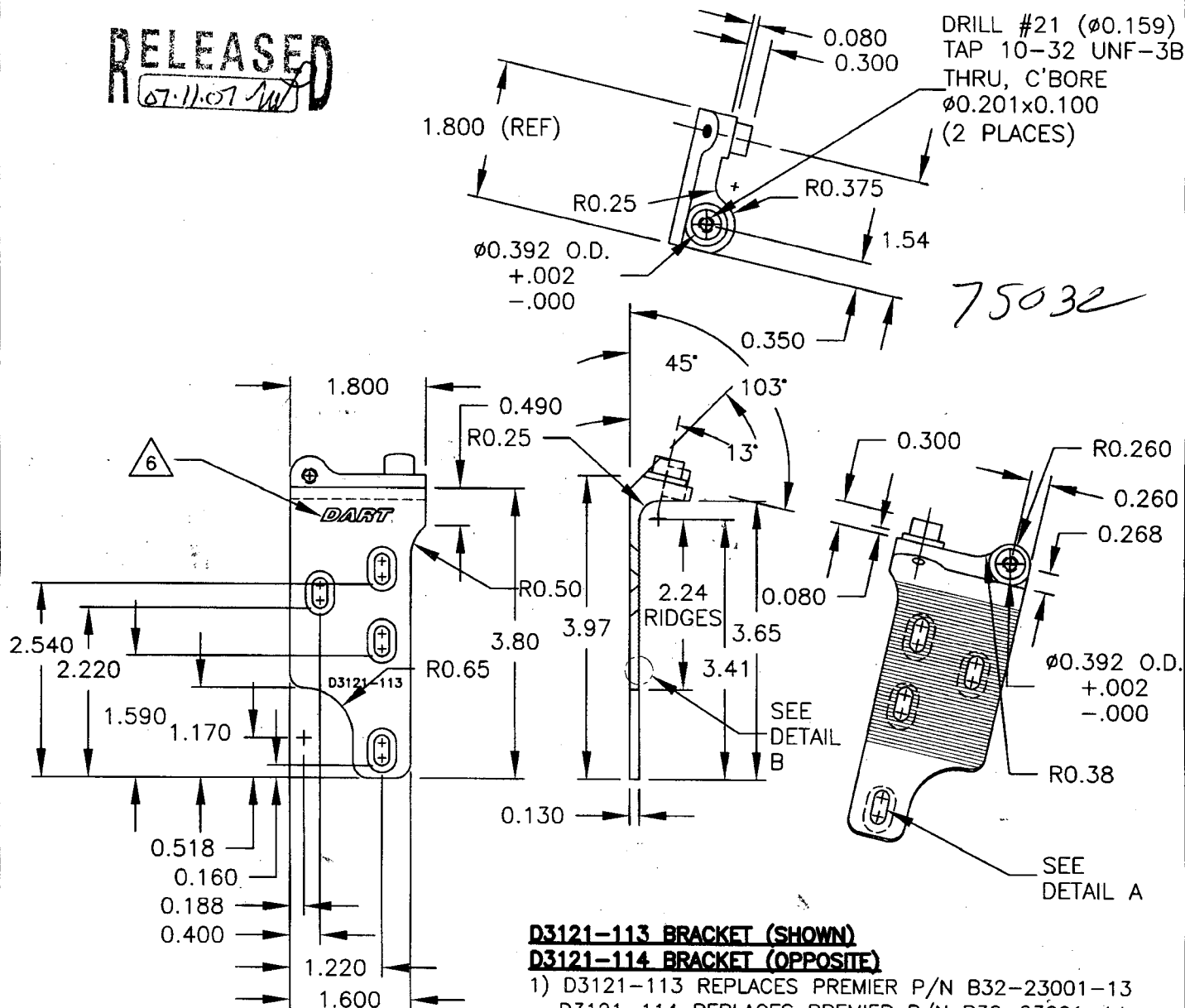
- 1) REPLACES PREMIER P/N B32-23001-11
- 2) MATERIAL: 17-4 SS PER AMS 5604/5643 (REF DART SPEC. M17-4-B)
MIN ULTIMATE TENSILE = 150 ksi
MIN YIELD TENSILE = 100 ksi
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 6) ENGRAVE DART P/N & LOGO IN AREAS SHOWN
- 7) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

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DESIGN #	DRAWN BY LE	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED #	APPROVED #	DRAWING NO. D3121	REV. E SHEET 8 OF 10
DATE 07.11.07		TITLE BRACKET ASSEMBLY	SCALE 1:2

RELEASED
07.11.07**D3121-113 BRACKET (SHOWN)****D3121-114 BRACKET (OPPOSITE)**

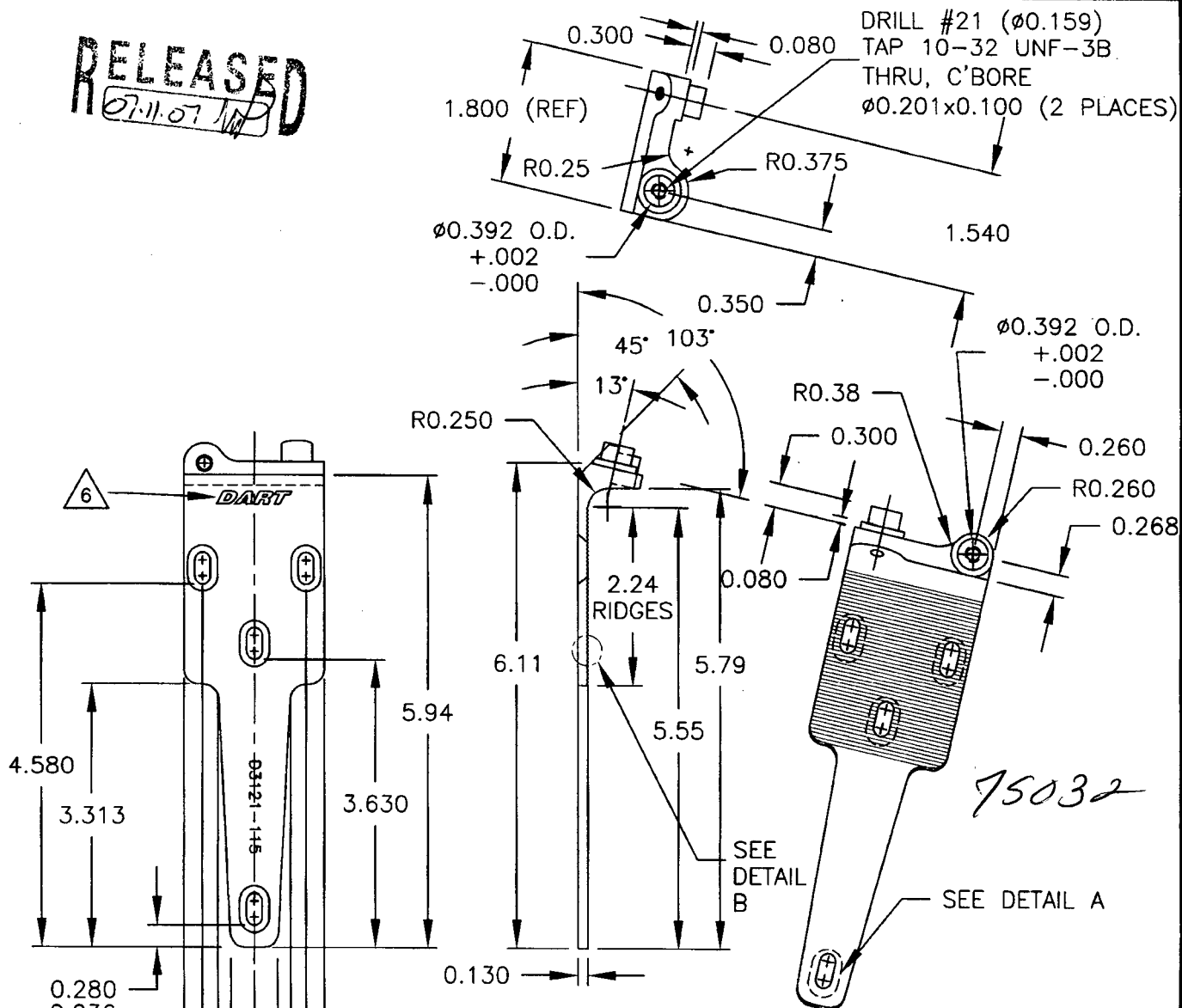
- 1) D3121-113 REPLACES PREMIER P/N B32-23001-13
D3121-114 REPLACES PREMIER P/N B32-23001-14
- 2) MATERIAL: 17-4 SS PER AMS 5604/5643
(REF DART SPEC. M17-4-B)
MIN ULTIMATE TENSILE STRENGTH = 150 ksi
MIN YIELD TENSILE STRENGTH = 100 ksi
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 6) ENGRAVE DART P/N & LOGO IN AREAS SHOWN
- 7) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

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DESIGN #	DRAWN BY LE	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED #	APPROVED #	DRAWING NO. D3121	REV. E SHEET 9 OF 10
DATE 07.11.07		TITLE BRACKET ASSEMBLY	SCALE 1:2

RELEASED
07.11.07**D3121-115 BRACKET (SHOWN)****D3121-116 BRACKET (OPPOSITE)**

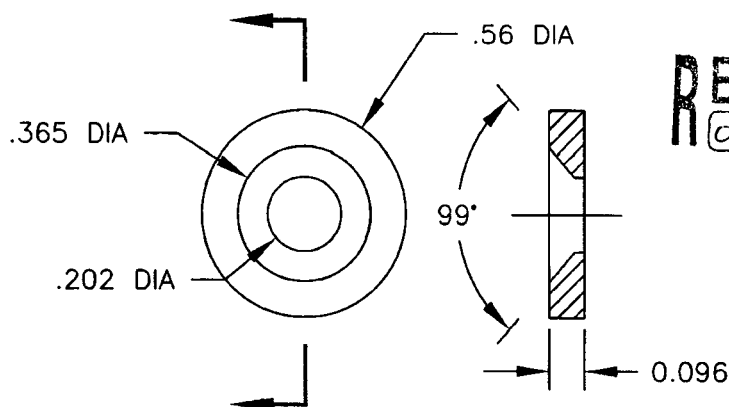
- 1) D3121-115 REPLACES PREMIER P/N B32-23001-15
D3121-116 REPLACES PREMIER P/N B32-23001-16
- 2) MATERIAL: 17-4 SS PER AMS 5604/5643
(REF DART SPEC. M17-4-B)
MIN ULTIMATE TENSILE STRENGTH = 150 ksi
MIN YIELD TENSILE STRENGTH = 100 ksi
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 6) ENGRAVE DART P/N & LOGO IN AREAS SHOWN
- 7) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

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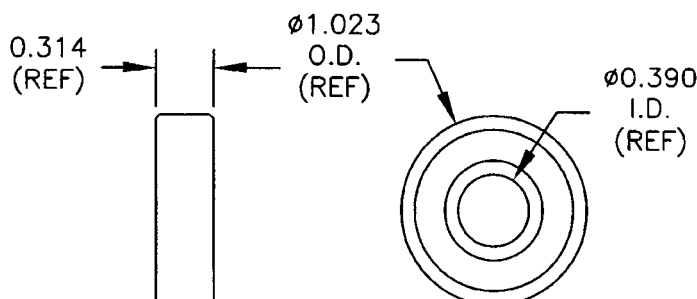
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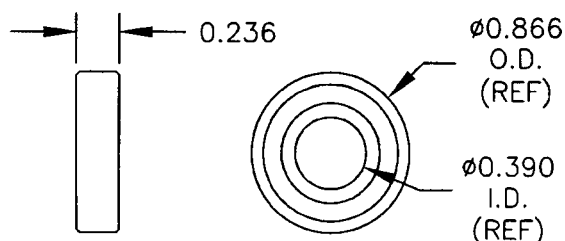
DESIGN #	DRAWN BY LE	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED #	APPROVED #	DRAWING NO. D3121	REV. E SHEET 10 OF 10
DATE 07.11.07		TITLE BRACKET ASSEMBLY	SCALE 1:1

**D3121-17 WASHER (SCALE 2:1)**

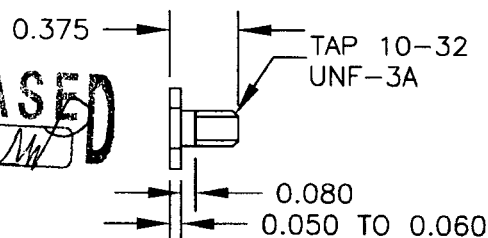
- 1) REPLACES PREMIER P/N B32-23001-17
- 2) MATERIAL: AISI 303 SS ROUND BAR, ANNEALED (REF DART SPEC. M303R)
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) BREAK ALL SHARP EDGES 0.005 TO 0.015

**D3121-19 BEARING (SCALE 1:1)**

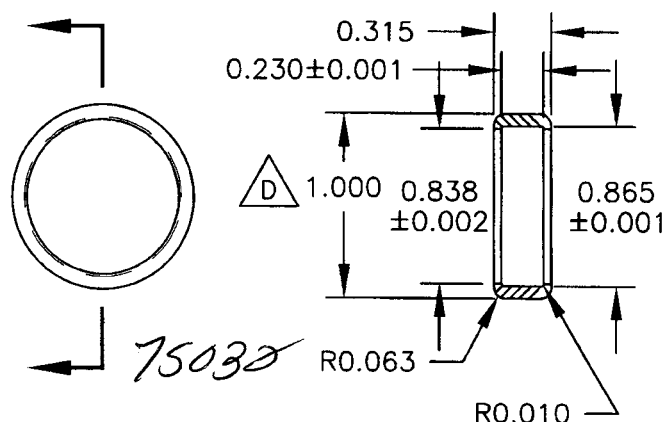
- 1) POSSIBLE SUPPLIER: KING BEARING P/N 6000-22J/EM FAFNIR P/N 9100KDD
- 2) ALL DIMENSIONS ARE IN INCHES

**D3121-23 BEARING (SCALE 1:1)**

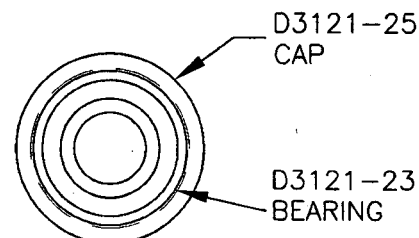
- 1) POSSIBLE SUPPLIER: SKF P/N 61900-22 OR KML P/N 6900-ZZ
- 2) ALL DIMENSIONS ARE IN INCHES

**D3121-21 BOLT (SCALE 1:1)**

- 1) MATERIAL: AISI 303 SS HEX, ANNEALED (REF DART SPEC. M303H0.500)
- 2) FINISH: NONE
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) BREAK ALL SHARP EDGES 0.005 TO 0.015

**D3121-25 CAP (SCALE 1:1)**

- 1) MATERIAL: DELRIN ROD, ϕ 1.25 (REF DART SPEC. M-DELRIN-R1.250)
- 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) ALL DIMENSIONS ARE IN INCHES

**D3121-241 BEARING ASSEMBLY (SCALE 1:1)**

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